

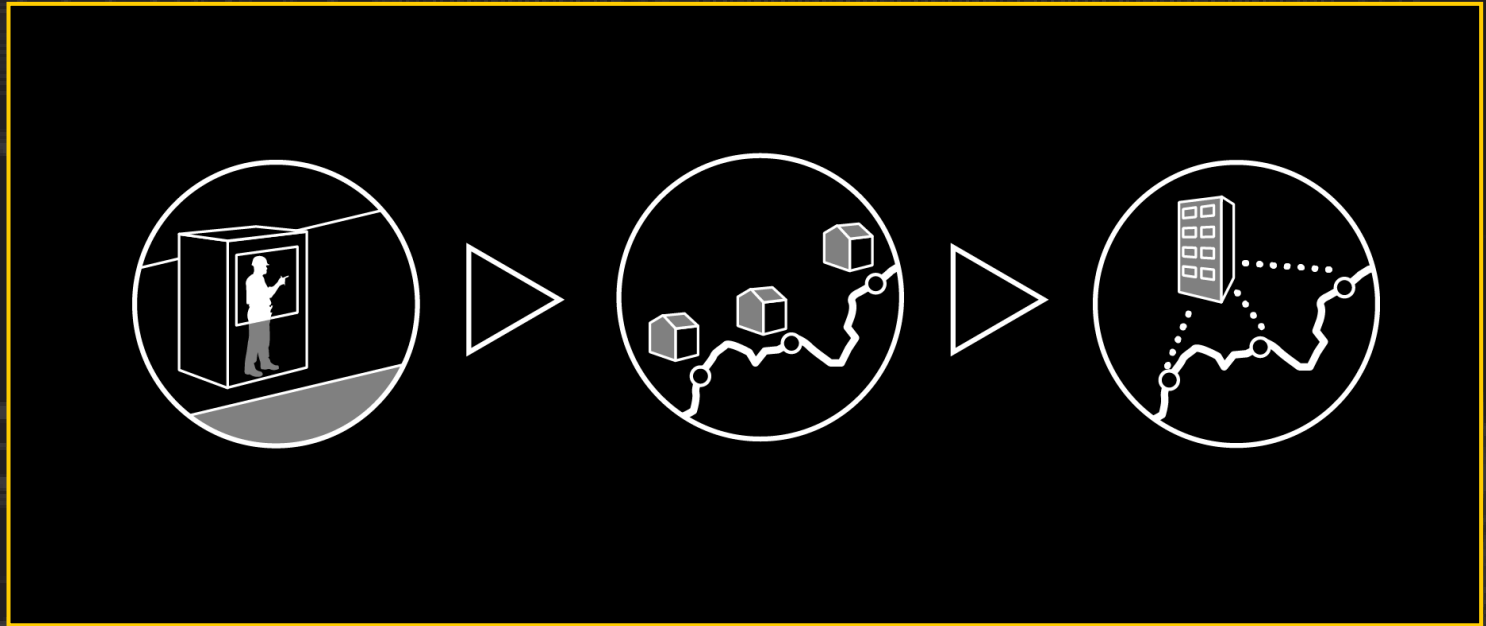
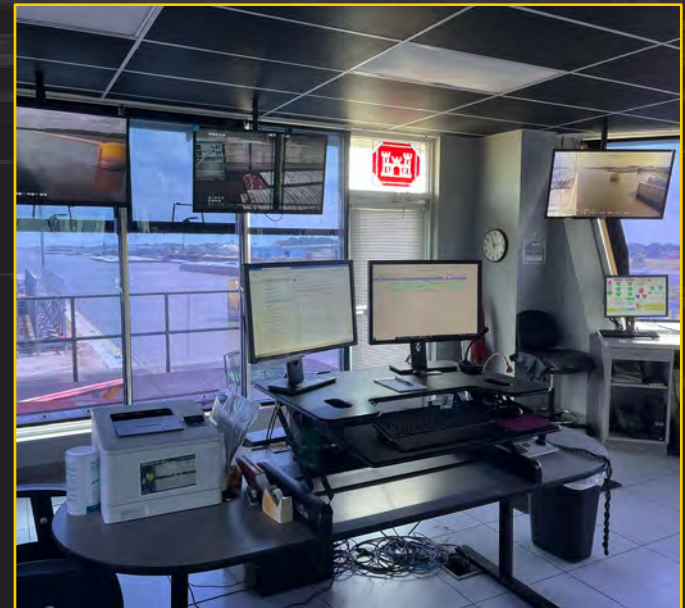
LOCK & DAM CONTROLS MODERNIZATION

Inland Waterways Users Board
Meeting #103
St. Charles, MO

August 1, 2024



US Army Corps
of Engineers®





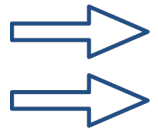
VISION & GOALS



VISION:

Implement lock & dam controls modernization to prepare for the future of navigation.

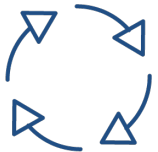
GOALS:



1. **Consistent national implementation.** Establish national program to develop policy and guidance to enable consistent implementation with MSCs and Districts.



2. **Commonality.** Promote commonality through development of common operating procedures, staffing, design, and equipment / components.



3. **Life cycle investment.** Develop a multi-year life cycle investment plan that is flexible and adaptable to USACE's unique requirements and circumstances.



4. **Prioritized for people.** Take care of people. Implement staffing transition and training plan.



BUSINESS CASE



Yesterday



Today



Tomorrow



Benefits

- Modernized & standardized controls
- Increased reliability & resiliency
- Reduced operating costs
- Workplace safety



Challenges

- Organizational acceptance
- Staff expertise & training
- Cost (initial and recurring)
- Portfolio diversity
- Cyber security



Opportunities

- Prepares for future of navigation
- Flexibility – site adaptation
- Commonality & standardization
- Alignment with other on-site infrastructure (ex. hydropower)

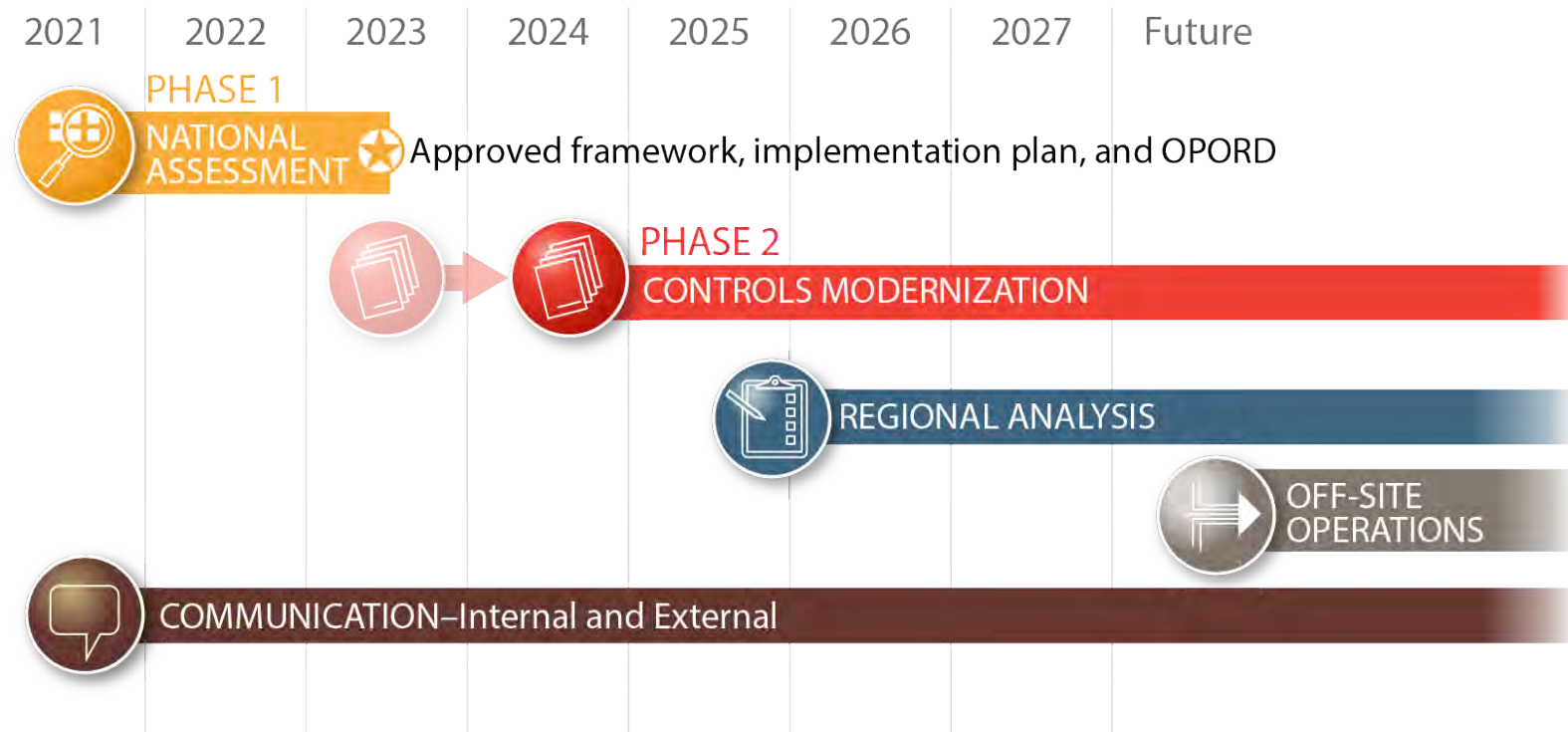
Phase 1: National Assessment

- Completed in July 2023

Phase 2: Controls Modernization

- Step 1: Develop National Standards
- Step 2: Controls Modernization
- Step 3: Regional Analysis

Phase 3: Transition to off-site operations if RIR approved & funds appropriated





PHASE 2 TIMELINE

Step 1: National Standards (Ongoing)

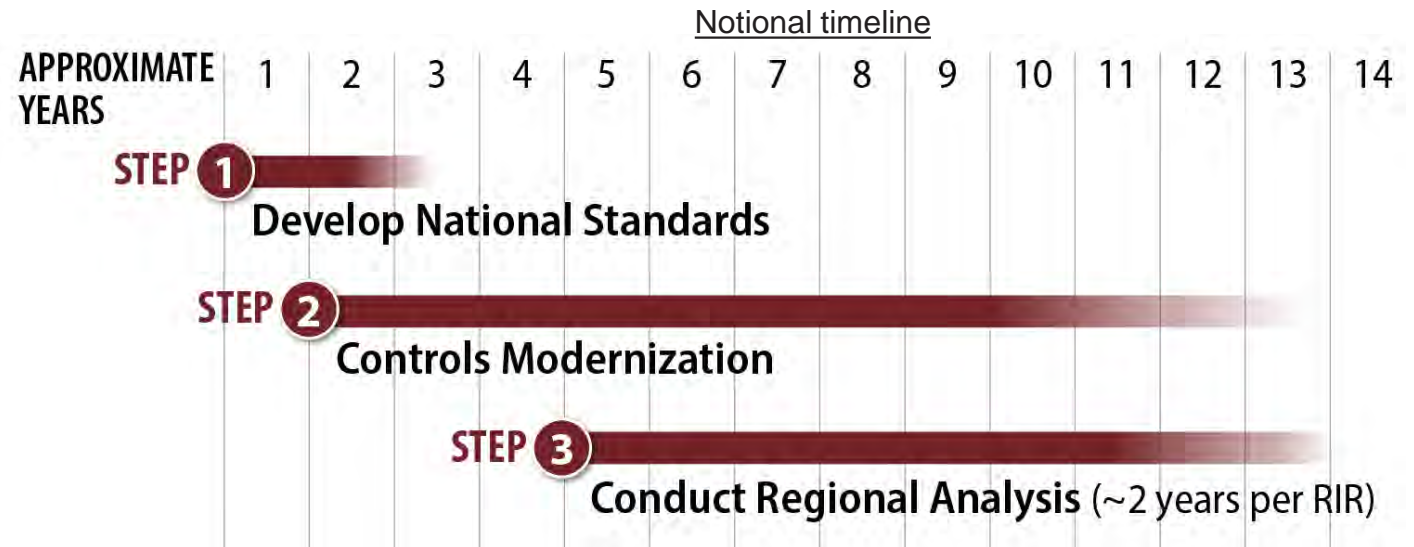
- Develop national standards to ensure consistent application nationwide

Step 2: Controls Modernization

- Modernize controls using PLC's, cameras, sensors, and other operational technology
- Improves reliability and lowers O&M costs

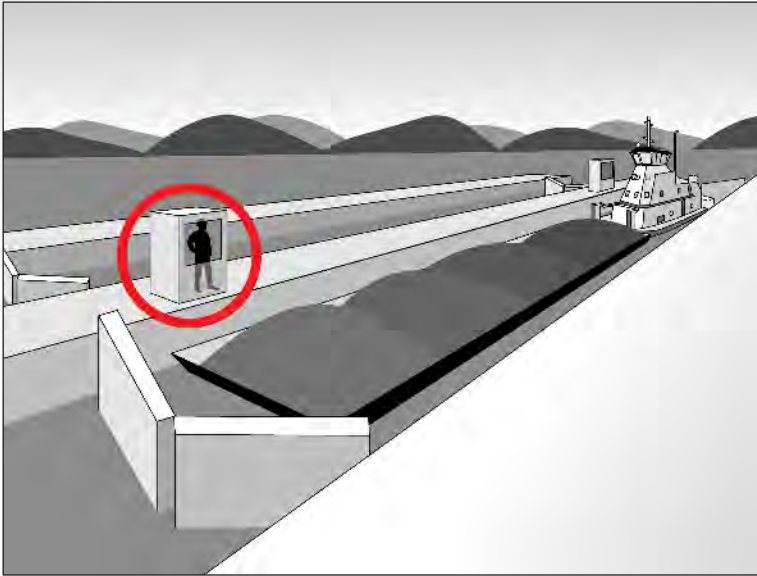
Step 3: Regional Analysis

- Detailed site-specific assessment & business case (RIR)





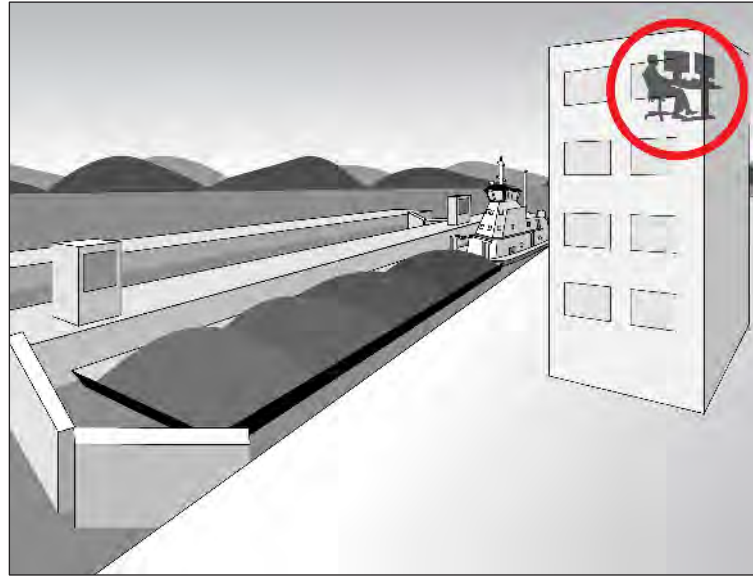
OPERATIONAL SCENARIOS



Local Operation

- Lock operated from lock wall
- Maintain capability to operate from lock wall.

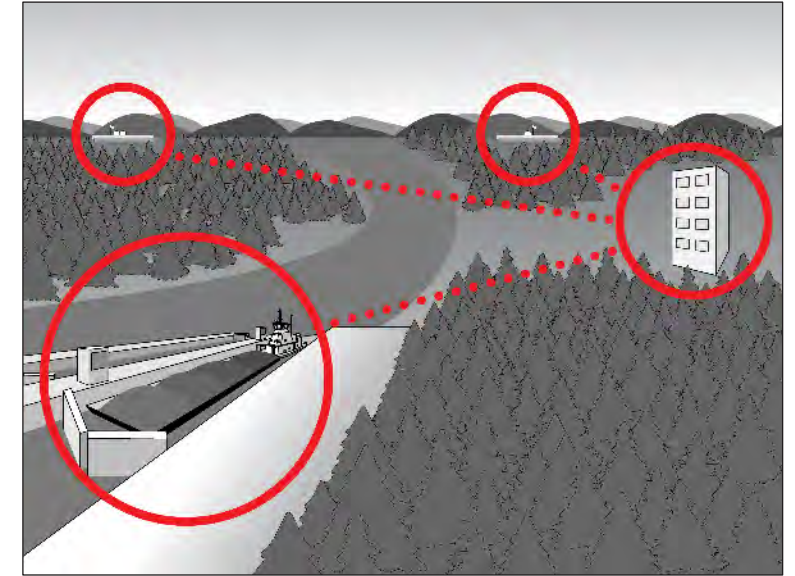
Majority of current portfolio



On-site Control Room

- Lock operated from *local control room* using camera & sensors.
 - The Corps has 20+ years experience operating locks from a control room.
- Maintain capability to operate from lock wall.

Currently operating
at many of “new” locks



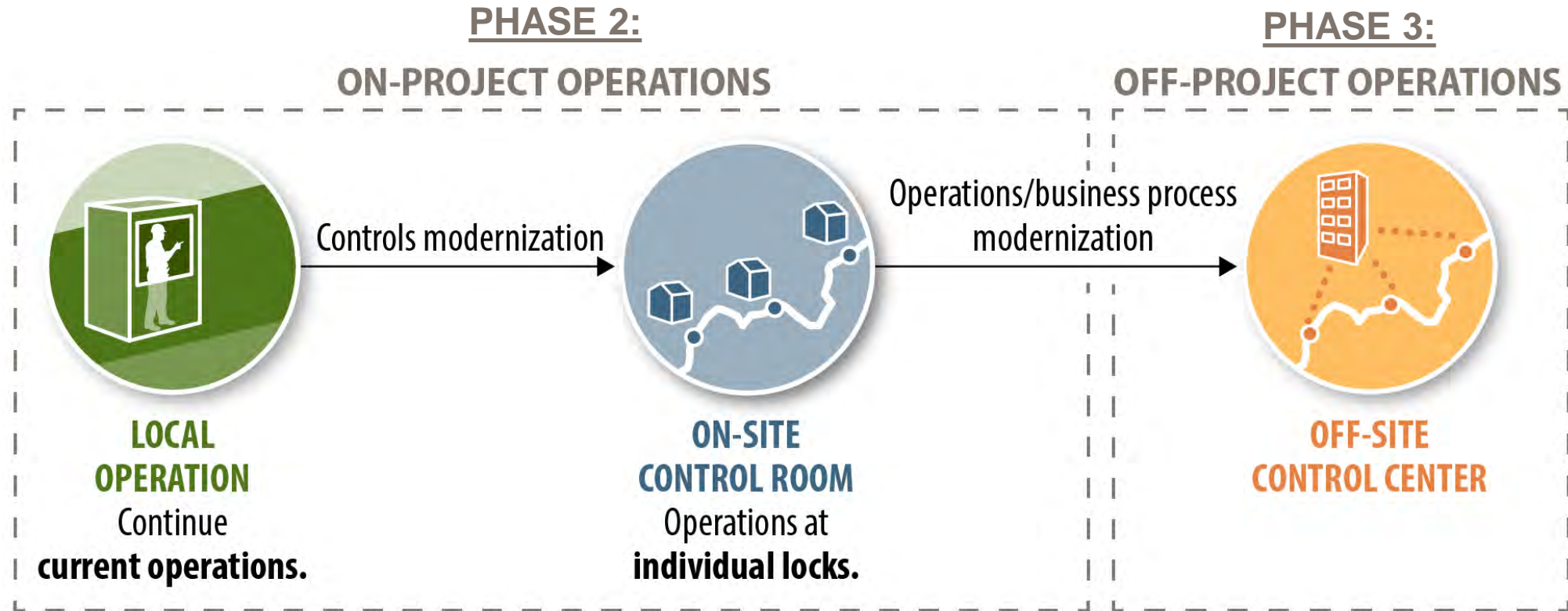
Off-site Control Center

- Lock operated from *off-site control room* using camera & sensors.
- Off-site operation is **not automated** locking.
- Multiple locks operated from primary control center with alternate control center & standby local operation capabilities.

Future operations?



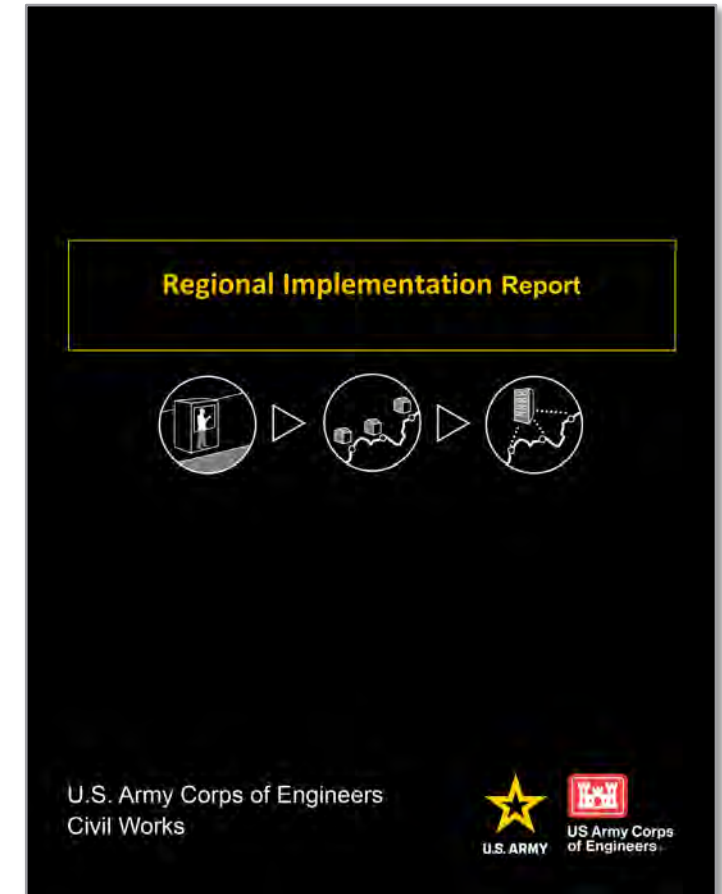
IMPLEMENTATION SCENARIOS CONT.





REGIONAL IMPLEMENTATION REPORTS (RIR)

- **Detailed site-specific assessment** to determine viability (O&M projects)
- Regional, detailed business case documenting *cost avoidance & return on investment*
- Engagement with USACE workforce
- Infrastructure upgrades, revised operation procedures & staffing model
 - Solutions for specific operational challenges
 - Application of site-adapted national design standards
- Synergies with other Corps projects (ex. hydropower)
- Cost estimates (for budget request) and proposed schedule
- Coordination with Federal agencies & stakeholders
- **Approved RIR required before budgeting for implementation**

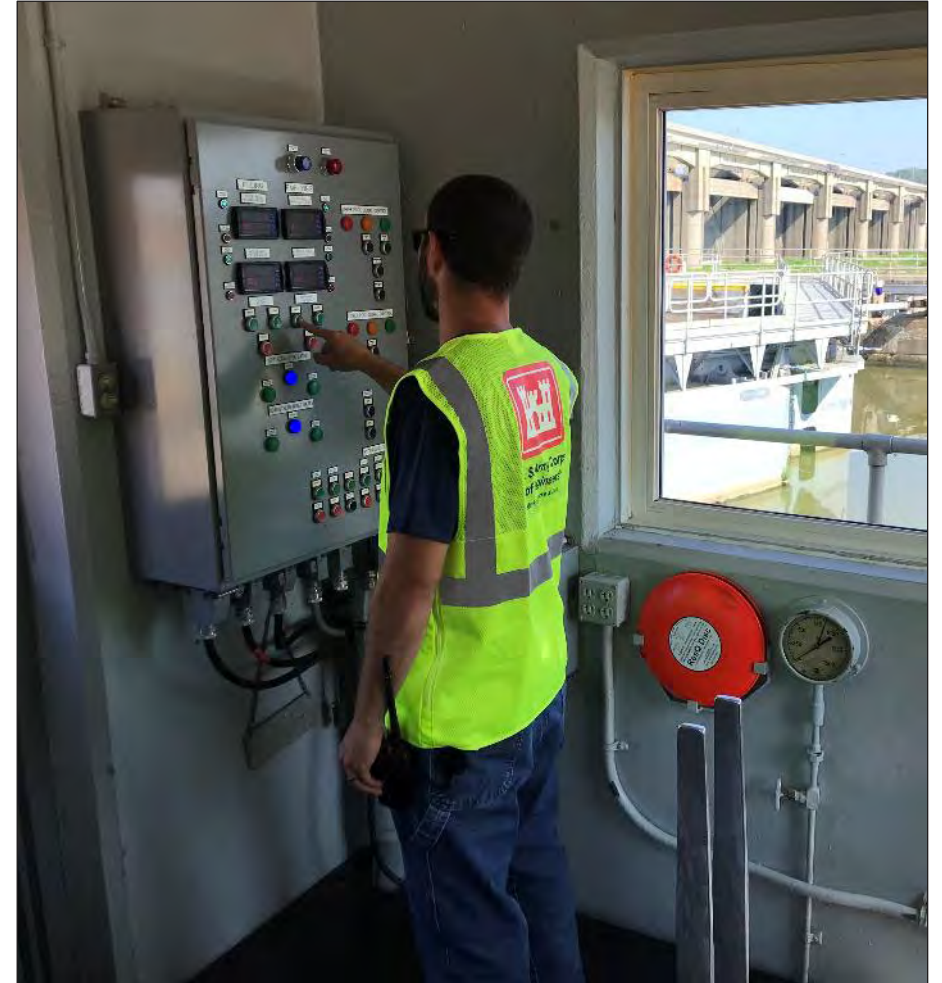




PERSONNEL MANAGEMENT KEY TENETS

Command commitment: FOCUS ON PEOPLE

- No reduction in force (RIF)
- Cooperation & involvement of all employees
- Staffing study will inform the planning and execution of any workforce transition strategy
- Achieve efficiencies **without** involuntary separations or involuntary geographic moves
- Follow previous successful workforce shaping efforts and tools
 - Voluntary workforce shaping tools are effective but need time to work; the longer the time, the better the results
- Close collaboration with unions
- Communication



Lock operations today



SUMMARY

- **USACE Commitments:**

- Safety
 - Reliable & consistent locking
 - Maintain public access & assistance during recreational locking
 - Protecting the system to advance physical & cybersecurity
 - Communication with USACE staff, agencies, & stakeholders
-
- Controls standardization and modernization will improve reliability, resiliency, and reduce operating costs.
 - Any transition to off-site operations will be based on a sound business case, collaboration with stakeholders & staff, and will be a deliberate process with continuous improvement.



Current control room